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ABSTRACT

The precise needs of the composition program at the University of California at Riverside prompted the experimental use of twelve grammar and syntax computer programs in a remedial English course. For this experiment, fifteen students, ranging in class level from a third-quarter freshman to a fourth-quarter senior, completed at least one program a week on the computer and also met once a week with the instructor for a two-hour writing workshop. Although accurate assessment of the experiment's effect upon student writing was not possible, student reaction to the course was favorable and included requests for the development of punctuation programs. (JM)

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Composition and the Computer[x]

The need for experimentation with the computer was stimulated by very precise demands in the composition program at the University of California at Riverside. The Riverside campus of the University of California is located sixty miles East by South East from Los Angeles. The total enrollment of the campus is 4800 students of whom 1800 are graduate students. Of the 3000+ students at the undergraduate level roughly one quarter to one third of the entering students are considered to need remedial work in composition. The University of California has as a general policy rather strict entrance requirements. One of those requirements is the taking of the College Entrance Examination. If a student scores below 550 on the verbal part, he must register for Subject A--Remedial English. Because the material covered in Subject A has been considered remedial in nature (i.e. something the student should have learned in high school, but did not), no unit credit has been given for the course and the student has been charged a fee of $45. Further, the course displaces four units in the student's program, and with the advent of tuition, the real cost of Subject A is in excess of the $45 fee charged.

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Typically the students in Subject A are very diverse: While 90% of all minority students admitted to U.C.R. must take Subject A, minority students make up only 40% of the total enrollment in the course. Because of the entrance requirements at the University of California, most of the students in Subject A have performed very well in high school (B average or better) and many have averaged much higher in English courses. But, for whatever reason, these students find themselves in a remedial course which costs money over and above the tuition. As might be imagined, morale in Subject A is very low--for both students and teachers.

After careful evaluation, extending for a period of some six months, the committee of the Academic Senate charged with overseeing the program, the Subject A Committee, recommended a series of changes: unit credit, elimination of the fee, a change of name for the course, and innovation in the methods of teaching the course.

One area the committee investigated was Computer Aided Instruction. Our decision was not prompted by the exotic nature of the machinery nor by the feeling that it might be possible to get grant money for development, but by our feeling that an interactive system coupled with a tutorial project might be the best way to teach English composition--or at least a method that should be explored. Very fortunately Ms. Anna Marie Thames of Golden West College in Huntington Beach, California, agreed to come to the U.C.R. campus and to demonstrate the programs she had developed. After some five years in research and development her programs in remedial

composition appeared to be highly sophisticated and exactly what we were looking for. After some negotiation she agreed to give us her programs to use in our experiment. Two advantages accrued from such an arrangement. First, we could never hope to match the skill of her programs without spending an equal amount of time, and secondly, her programs were designed for the most remedial of students at a Junior College that had no entrance requirements whatever.

Mr. Thame's system consisted of 15 programs of which we used 12. The programs were written in APL and designed for use on the IBM 360-50 with remote terminals. Golden West College had been committed to CAI for some time and between Ms. Thames and her programmers we were able to set up and experiment with ACI--Composition in a very short amount of time.

Because our budget extends from July 1 to July 30, the "short amount of time" was very short indeed. Our decision to experiment was taken at the beginning of the Winter Quarter (c. 3 Jan 1972) and we wished to go into operation during the Spring Quarter (c. 1 April 1972). What with technical matters to solve: finding a room, installing terminals, shuffling papers, our sample was not as accurately chosen nor as large as it should have been. I recruited some 15 students to take the Subject A program. Their ages ranged from 18 to 35 and their years in school from 3rd quarter freshman to 4th quarter senior. Three of the fifteen students were classified as minority. They were especially chosen by me because I wanted to discover as well as I could, whether language programs

developed at a school which has few if any minority students would be difficult for minority students to understand. As I will explain later such negative interference did not occur.

As an inducement to the students to try to program, I offered them the assurance that they would satisfy the Subject A requirement if they finished the twelve programs. Further, I assured them that the course would be free--grants defrayed the cost of the program. In general, the organization of the course was the following: three remote terminals were placed in a room in the library. The room was open from 1 p.m. to 5 p.m. (the hours APL was "up" at U.C.R.). A student programmer was hired at $2.75/hr. to be on duty at all times that the room was open. The programmer's function was two-fold: he was to assist the student in the event of difficulties due to technical problems whether program or student-generated; and secondly, he was to act as a monitor. The students signed up to work with the programs as they wished. The course was designed so that a student had to complete one program per week and each program tended to take an hour to work. A student could work at a faster rate if she/he chose. Once a week the students met with the instructor in the course for a 2 hour writing workshop during which the instructor helped the students with papers he assigned or papers they were working on in other courses. These writing assignments were not graded because we wanted primarily to see how the students were reacting to ACI.

At the conclusion of the quarter, we evaluated the experiment, and the results were quite encouraging. With so many variables it was impossible to register accurately the effects of CAI upon student writing. Consequently, we confined our enquiries to whether the students liked the approach and whether they thought it was helpful. All agreed that they liked the approach and that they found it helpful. Universally they liked the fact that they were doing something rather than listening to how to do something.

Various difficulties were experienced with the program, the major one being the inability to assess accurately the effect of CAI upon the students' writing. The size of the group was too small to be valid. Further, because of the short amount of time to set up the experiment, we could not set up a norm group. Further, no pre- and post-test was established that would indicate student improvement. We remained undaunted, however, because we did discover that such a system could work and that students liked it. The effects of CAI did not seem difficult to assess in the future, and experiments could be constructed that might indicate such effects. Further, results might even indicate whether the system was "cost-effective".

Typical costs we encountered were: Programmer $2.75/hr; "Q" time $5.00/hr; terminal rental $80/mo. each. Certainly the experiment was costly, but no more so than what is commonly experienced in the physical sciences and considerably less by most standards.

In the evaluation of the program the students all requested that we develop punctuation programs. With favorable action on our grant request we began work on three programs in punctuation: the use of the colon, semicolon, and the comma. Two of our programs (colon and semi-colon) are finished and the comma is still in a mixed stage of development. The rules for these are very traditional because I wished to give a basic approach from which the student could deviate later. The sentences were developed by a friend from Pasadena. The programs and the speed with which we worked are entirely attributable to my programmer, Mr. Lee Bernier, a graduate student in statistics.

The term "composition program" may be a misnomer, for CAI-composition is not designed to teach anyone to write a composition, a task I have found too difficult at this stage to program. Rather, CAI-composition is designed as a "fun" yet educationally sound way in which the student can practice grammar and syntax. To draw a somewhat far-fetched analogy, yet one I think will hold, writing a composition is similar to a basketball game: many parts go into making up the complete game. But individual parts can be practiced. Analagously, many parts go into writing a composition. Many of the parts can be practiced and CAI supplies the practice. In short, CAI can permit the student to learn on his own what he is capable of learning, and it frees the teacher to emphasize other aspects that only the teacher can supply.